CalRecycle

Department of Resources Recycling and Recovery

Handling Fee Workshop

January 10, 2013

Presentation Outline

1. History of Processing Fee (PF) and Handling Fee (HF) Cost Surveys
2. History of Convenience Zones and Handling Fees
3. Overview of Processing Fee and Handling Fee Cost Surveys
4. Similarities and Differences Between PF and HF Cost Surveys
5. Detailed Review of Handling Fee Cost Survey Methodology
6. Analysis of Handling Fee Cost Survey Results
7. Policy Implications of Current Handling Fee Methodology
8. Longer-Term Challenges Related to Convenient Recycling and Convenience Zones

1. History of PF and HF Cost Surveys

- The Processing Fee and Handling Fee Cost Surveys support two key features of the California Beverage Recycling and Litter Reduction Program:
  - Recyclers are required to accept all beverage container material types, and thus should be “made whole” for their costs of recycling
  - Consumers should have convenient recycling opportunities – but grocery stores are not necessarily required to accept containers
- In order to provide accurate support for these activities, California determines:
  - The cost of recycling, by material type (The PF Cost Survey)
  - The difference between the cost of recycling at convenient supermarket sites and the cost of recycling at traditional recycling centers (The HF Cost Survey)

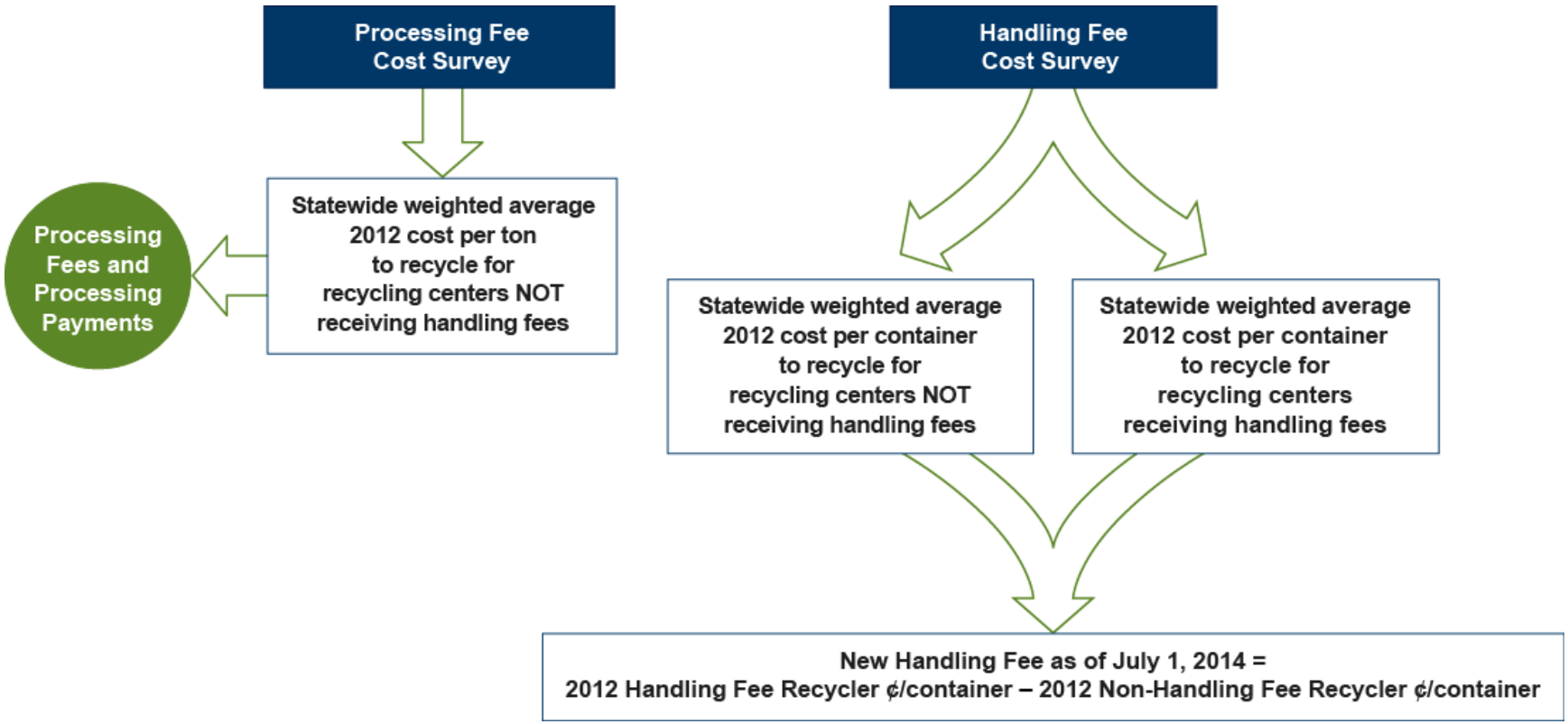
1. History of PF and HF Cost Surveys *(continued)*

- The Processing Fee Cost Survey has been conducted 13 times since the program's inception in 1987
  - The PF cost survey has evolved over the history of the program to the current labor allocation approach
  - Initial cost surveys used a time and motion study method, included processors, excluded high cost recyclers, and other variations
  - Not all PF cost surveys were used to determine processing fees and processing payments
  - Since 1999, the cost survey has been used to determine processing fees and processing payments
  - The PF cost survey has been conducted every other year since the survey of 2002 costs
    - The survey of 2002 costs was conducted in 2003, and established the January 1, 2004 processing fees and processing payments
    - The most recent survey of 2010 costs was conducted in 2011, and established the January 1, 2012 processing fees and processing payments
    - The next PF cost survey of 2012 costs will be conducted in 2013, and establish the January 1, 2014 processing fees and processing payments

1. History of PF and HF Cost Surveys *(continued)*

- The Handling Fee Cost Survey has been conducted three times since 2007
- AB 3056 (Statutes of 2006) established the HF survey as a method to determine the handling fee payment to support convenient recycling
  - Requires the DOR to conduct a cost survey of recycling centers that receive handling fees and recycling centers that do not receive handling fees
  - Starting July 1, 2008, the handling fee payment will be equal to the difference between the cost of recycling at sites that receive handling fees and the cost of recycling at sites that do not receive handling fees
  - AB 3056 also removed some restrictions on handling fee eligibility and caps
  - The handling fee cost survey is conducted at the same time as the processing fee cost survey
    - The most recent handling fee cost survey of 2010 costs was conducted in 2011 to determine the July 1, 2012 handling fee
    - The next handling fee cost survey of 2012 costs will be conducted in 2013 to determine the July 1, 2014 handling fee

1. History of PF and HF Cost Surveys *(continued)*



2. History of Convenience Zones and Handling Fees

- AB 2020 established specific goals for convenient recycling in order to allow consumers to redeem their containers and receive back their refund value
  - Unlike a traditional bottle bill, dealers (stores) were not required to accept empty containers
  - AB 2020 established redemption centers close to where people shopped – Convenience Zones (CZ)
    - Defined as the areas within a ½ mile radius surrounding a supermarket with annual sales over $2 million
    - Each CZ was to contain at least one recycling center that accepted all container types and was open at least 30 hours per week
    - If there was no recycler, then dealers in the CZ would be required to take back containers, or pay a fee
  - AB 2020 initially (before the concept of handling fees) contained a “safety net” to help pay the cost of recycling centers located in CZs, known as the Convenience Incentive Payment (CIP)
    - Only sites that were sole redemption location in a zone and realized a net average monthly financial loss were eligible for CIP, up to a maximum of $13 million per year in total

2. History of Convenience Zones and Handling Fees *(continued)*

- A series of laws between 1988 and 1991 modified CIPs and required the DOR to report on the effectiveness of convenience zones
  - The maximum CIP per container was limited to 7 cents, and the total payment no more than $1,145 per month
  - The number of convenience zone exemptions was increased (exempt zones do not require a recycler) – from 15 percent to 20 percent
  - Total annual CIP payments were increased to $18.5 million, then reduced to $15 million
  - The maximum CIP per container was limited to 5 cents, and the total payment no more than $1,500 per month, except that 15% of recipients could receive $2,000 per month
- The Convenience Zone Effectiveness Study, completed in 1991, made recommendations to improve CZs, but concluded that overall the program was well-conceived for meetings its goals
- AB 87 (Statutes of 1992) resulted in substantial changes to the CZ/CIP system
  - CIP was replaced with a per container handling fee (old concept of handling fees) of 1.7 cents, a maximum monthly payment of $2,300, and minimum number of containers recycled to be eligible
  - The maximum annual HF was set at $18.5 million, and number of exemptions at 25%

2. History of Convenience Zones and Handling Fees *(continued)*

- The basic handling fee approach outlined in AB 87 was in place between 1993 and 2008
  - The 1.7 cent HF was performance based, with minimum 45,000 containers per month (later increasing to 60,000) requirement, and priority for payments going to sites with higher volume
  - The monthly maximum was reduced to $2,000 in 1995, then increased back to $2,300 in 1999
  - The per container fee was increased to 1.8 cents in 1999
  - The total amount of payments was capped at various levels, and in many years increased if there were not sufficient funds to pay the HF to all eligible sites for the entire year
    - Maximum annual HF payments set at $18.5 million in 1992
    - Maximum annual HF payments set at $23.5 million in 1999
    - Maximum annual HF payments set at $26.5 million in 2003
    - Legislation was passed in 2004, 2005, and 2006 to retroactively increase HFs

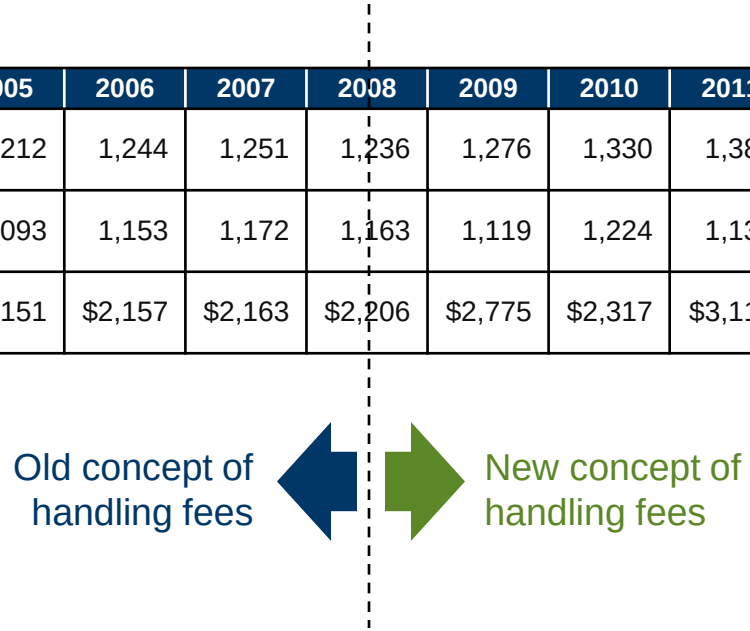
2. History of Convenience Zones and Handling Fees *(continued)*

- AB 3056 (Statutes of 2006) Established a new approach to handling fees (new concept of handling fees)
  - Handling fees would be based on the cost differential between "handling fee" recyclers – i.e. those recyclers in a CZ that receive handling fees, and "traditional recyclers" – i.e. those recyclers not receiving handling fees
    - The latter are the recyclers included in the processing fee cost survey, often called processing fee recyclers
  - The intent is that this new approach determines the additional cost of providing convenient recycling, and reimburses supermarket lot recyclers appropriately
  - AB 3056 also eliminated the $2,300 per month maximum HF, and eliminated caps on total HF payments
- The first HF Cost survey resulted in a HF of 0.98 cents per container, implemented July 1, 2008
- Proportional reductions reduced HF payments in 2009
- The second HF cost survey resulted in a HF of 0.859 cents per container, implemented July 1, 2010
- The third HF cost survey resulted in a HF of 0.773 cents per container, but was not implemented due to AB 1933

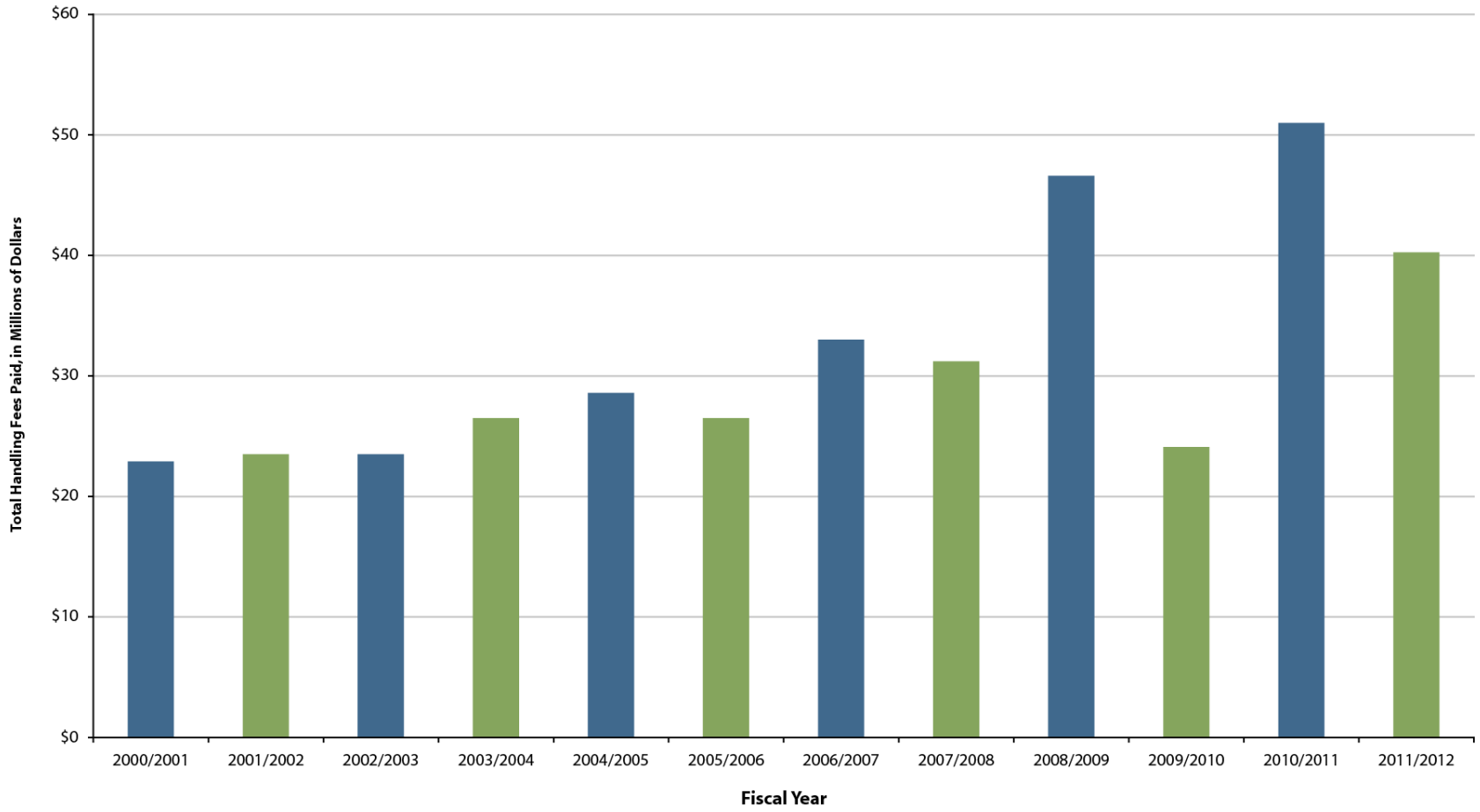
2. History of Convenience Zones and Handling Fees *(continued)*

- The table below provides the typical monthly number and funding of handling fee sites between 2002 and 2012

	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Typical number of HF sites	1,278	1,178	1,165	1,212	1,244	1,251	1,236	1,276	1,330	1,388	1,406
Average number of HF sites funded	958	991	944	1,093	1,153	1,172	1,163	1,119	1,224	1,131	1,152
Average HF per site per month	$2,058	$2,080	$1,917	$2,151	$2,157	$2,163	$2,206	$2,775	$2,317	$3,110	$2,712



2. History of Convenience Zones and Handling Fees *(continued)*



3. Overview of Processing Fee and Handling Fee Cost Surveys

- Processing Fee Cost Survey
  - Processing fees are paid by beverage manufacturers to support recycling and are augmented by unredeemed funds
  - Processing payments are paid to recyclers to support recycling
  - The objective of the processing fee cost survey is to determine statewide, weighted-average, costs per ton to recycle, for recycling centers that do not receive handling fees (processing fee (PF) recyclers), for four beverage container material types: aluminum, glass, PET #1, HDPE #2
  - The processing fee cost survey is conducted every two years, to determine processing fees and processing payments
  - The processing payment, is a unique component of California's recycling program to support the cost of recycling in the event that the scrap value for a material is less than the cost of recycling. The processing payment is equal to:

    (Cost of Recycling + Reasonable Financial Return) – Scrap Value
  - The processing fee is paid by beverage manufacturers to help cover the cost of the processing payment (unredeemed funds are also used to cover the processing payment)

3. Overview of PF and HF Cost Surveys *(continued)*

- Handling Fee Cost Surveys
  - The objective of the handling fee survey is to determine statewide, weighted-average, costs per container to recycle, for recycling centers that do not receive handling fees (processing fee recyclers), and recyclers that do receive handling fees (handling fee (HF) recyclers)
  - The handling fee cost survey is conducted every two years, in conjunction with the processing fee cost survey, to determine handling fee payments, with the first HF survey in 2007
  - The handling fee is intended to support convenient recycling in California, and is equal to:

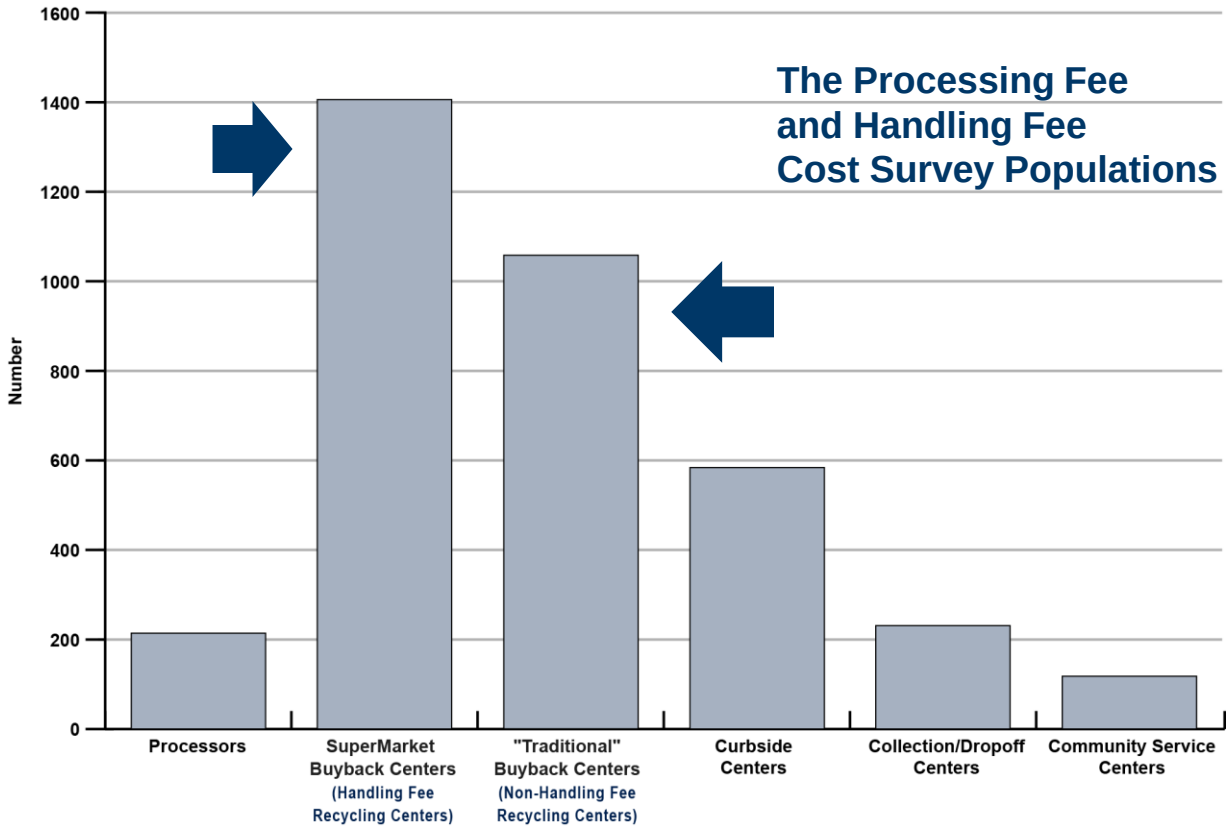
    HF Recycler Cost per Container – PF Recycler Cost per Container

- Matrix of Processing Fee and Handling Fee Cost Survey Metrics

Metric Category	Non-Handling Fee Recyclers	Handling Fee Recyclers
Cost/Ton	4 material types	N/A
Cost/Container	1 combined for all material types	1 combined for all material types

3. Overview of PF and HF Cost Surveys *(continued)*

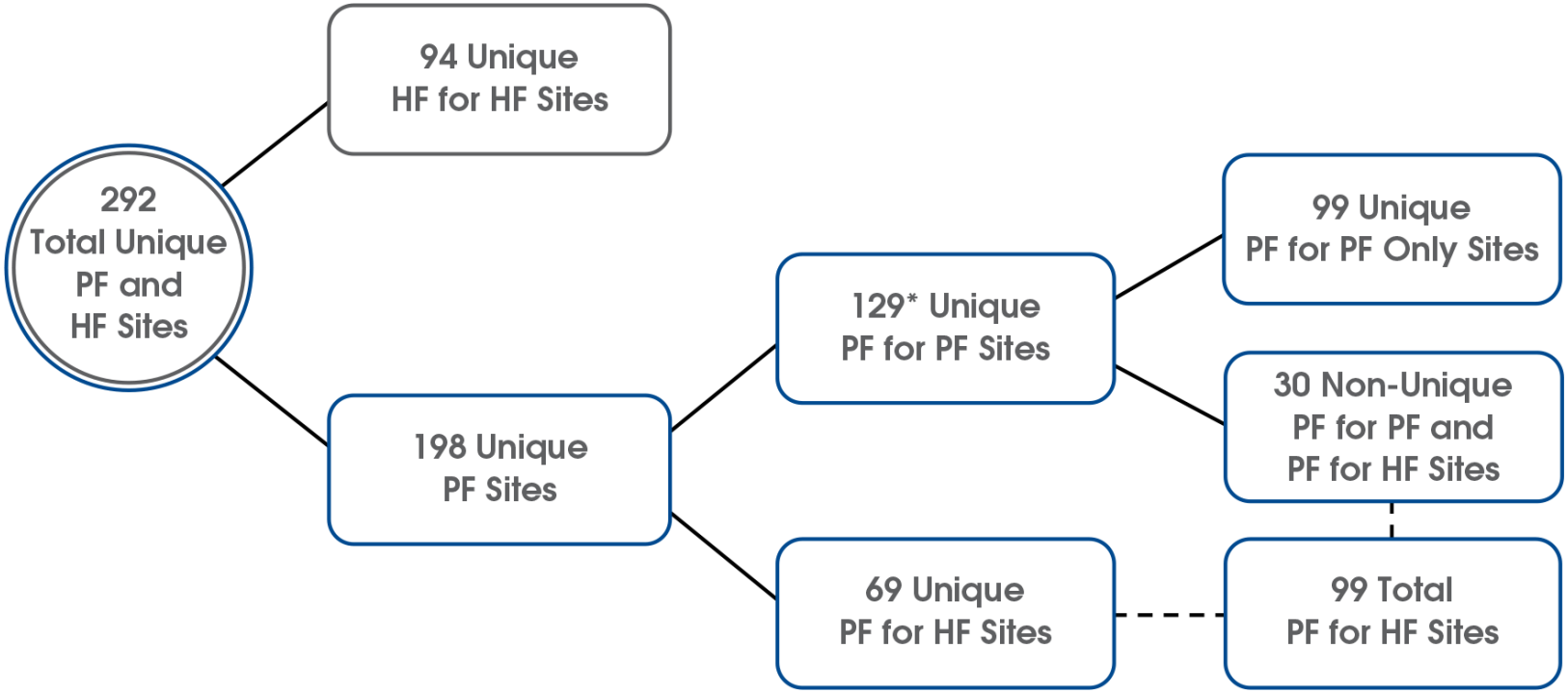
- Certified Beverage Container Recycling Centers and Processors (April 2012)



3. Overview of PF and HF Cost Surveys *(continued)*

- General Survey Approach and Methodology
  - These surveys determine costs of recycling, by material type and by container, by surveying statistically valid samples of recyclers
  - In 2010, there were 842 processing fee recyclers and 1,092 handling fee recyclers operating in California
  - The 2011 cost surveys consisted of:
    - 292 total unique PF and HF recycler surveys
    - PF Survey: Processing fee recycler costs per ton were based on 129 recyclers
    - HF Survey: Processing fee recycler costs per container were based on 99 recyclers and handling fee recycler costs per container were based on 94 recyclers

3. Overview of PF and HF Cost Surveys *(continued)*



3. Overview of PF and HF Cost Surveys *(continued)*

- The Department of Conservation and CalRecycle have conducted cost surveys for the last five surveys of costs for 2002, 2004, 2006, 2008, and 2010
- Each individual recycler survey consists of a site visit with three components:
  - A tour of the recycling center to understand operations
  - A review of financial statements for the survey year to determine allowable, non-allowable, and direct costs, by category
  - A labor allocation interview to determine, for each employee, percent of time spent on recycling, other business, non-CRV materials, CRV materials, and material type
- The final results are based on statewide, weighted averages
- Cost surveys only consider the COST side of the equation – not scrap values or revenues

4. Similarities and Differences Between PF and HF Cost Surveys

- Similarities
  - Survey methodology
    - Survey teams and training
    - Site visit procedures
    - Cost model
    - Allowable and non-allowable costs
    - Quality control reviews
  - Statistical requirements
    - 85% confidence level in regulation, but 90% confidence level in practice
    - Maximum 10% error rate
  - Stratified samples
    - Statistical method to reduce the total number of sites to be visited
    - Groups recyclers by size to reduce variability, which reduces sample size

4. Similarities and Differences Between PF and HF Cost Surveys *(continued)*

- Similarities *(continued)*
  - Statewide weighted-average cost calculation
    - Required in statute
    - This means that the cost calculation takes into account the volume (number of tons or containers) of each recycler
    - Provides a mechanism to extrapolate from the sample to the entire population
    - Gives more emphasis to the costs of high ton, or high container, recyclers within each strata
- Differences

Category	PF Cost Survey	HF Cost Survey
Recycler populations	One – traditional recyclers	Two – HF recyclers and traditional recyclers
Calculation factors	Includes scrap value and reasonable financial return	Only includes cost per container
Strata definitions	Three based on glass tons recycled	Three based on containers recycled
Strata definitions	Same over last 10 years	Adjusts each survey to result in equal total containers per strata
Calculation result	Cost per ton	Cost per container
Exclusivity payment	Not applicable	Not allowable

4. Similarities and Differences Between PF and HF Cost Surveys

(continued)

- Weighted-average by strata calculation example for processing fee recycler glass per ton

Stratum	Sample Glass Tons	Sample Glass Cost	Sample Cost per Ton
Stratum 1	79,800.46980	$5,779,440.00	$72.42
Stratum 2	12,871.10520	1,412,639.09	109.75
Stratum 3	2,027.74025	293,315.04	144.65
Sample Total	94,699.31525	$7,485,394.13	$79.04

1. Simple weighted-average cost per ton for each stratum, and simple weighted-average for the sample

Stratum	Population Glass Tons	Population Glass Cost	Population Cost per Ton
Stratum 1	191,462.33945	$13,865,702.62	
Stratum 2	102,385.35802	11,236,793.04	
Stratum 3	23,182.43617	3,353,339.39	
Population Total	317,030.13364	$28,455,835.05	$89.76

2. Total costs for each stratum, calculated by multiplying sample cost per ton from above, by total glass tons, summed for entire population

3. A statewide, weighted-average result of $89.76 per ton, calculated by dividing total population glass costs by total population glass tons

4. Similarities and Differences Between PF and HF Cost Surveys

(continued)

- Weighted-average by strata calculation example for handling fee recycler cost per container

	Sample CRV Costs	Sample CRV Containers	Sample Cost per Container
Stratum 1 →	$4,035,064.01	265,036,398	$0.015224565530
Stratum 2 →	$1,992,829.98	108,756,791	$0.018323729140
Stratum 3 →	$3,245,139.13	118,996,392	$0.027270903558

1. Simple weighted-average cost per container for each sample stratum

2. Total costs for each population stratum, calculated by multiplying cost per container from above, by total CRV containers, summed for entire population

Population CRV Costs	Population CRV Containers	Population Cost per Container
$23,122,098.39	1,518,736,173	
$27,730,527.03	1,513,367,002	
$41,732,811.41	1,530,305,416	
$92,585,436.83	4,562,408,591	$0.02029

3. A statewide, weighted-average result of $0.02029, calculated by dividing total population CRV costs by total population CRV containers

4. Similarities and Differences Between PF and HF Cost Surveys

(continued)

- Legislation requires CalRecycle/DOR to utilize statewide weighted-average calculations for determining the costs of recycling
- Weighted-average is a widely accepted statistical calculation
- A statewide weighted-average calculation, for either processing fees or handling fees, may more accurately measure population costs of recycling because it accounts for the larger volume recyclers, and weights the summary statistic by volume (either tons or number of containers) and not by recyclers
- A weighted-average takes into account the relative importance of each item in the sample (the costs of a recycler with only 1,000 containers does not count as much as the costs of a recycler with 1,000,000 containers)
- A weighted-average smooths out fluctuations in the data (i.e. recycler costs)
- A weighted-average accounts for uneven data (i.e. some recyclers handling significantly more containers than others), which is particularly important when dealing with a large population

4. Similarities and Differences Between PF and HF Cost Surveys

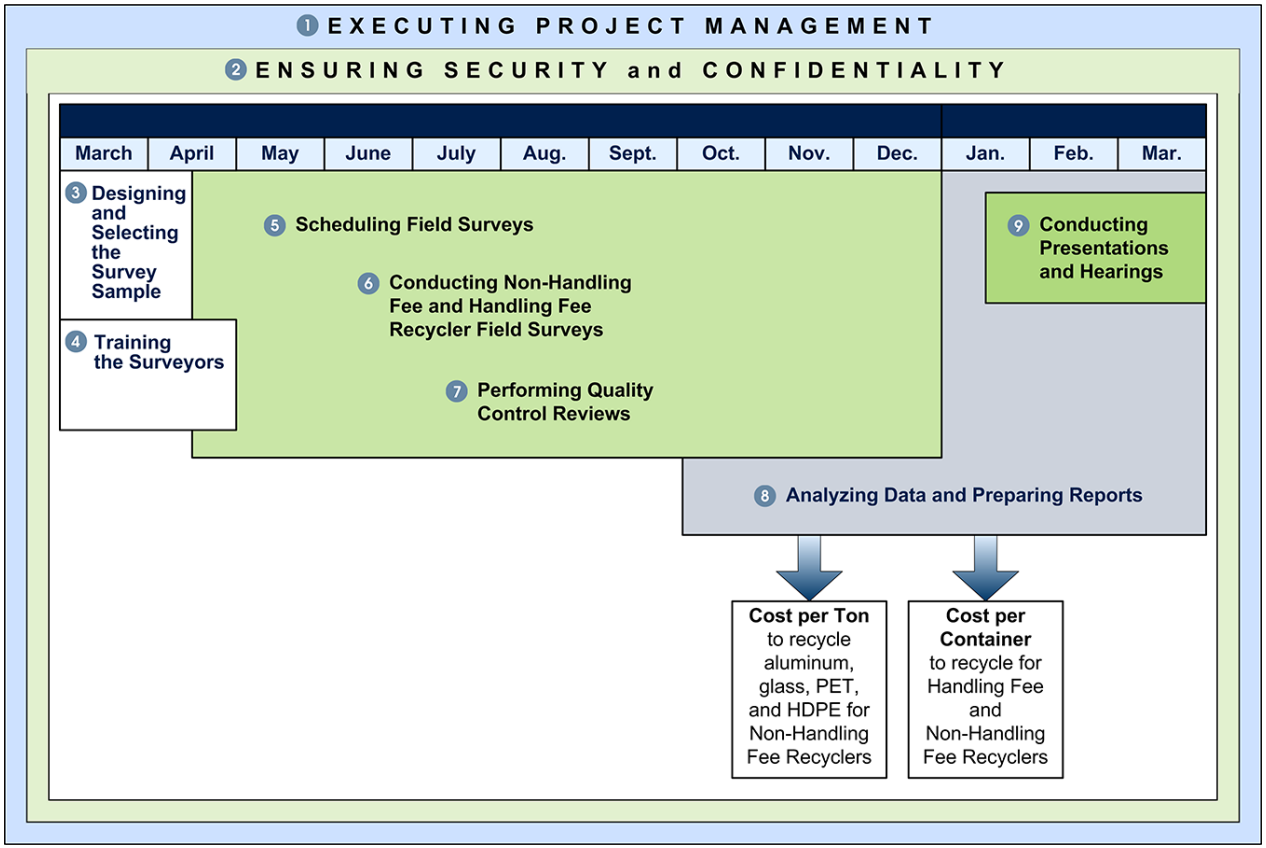
(continued)

- Stratification is a widely accepted and utilized sampling technique that groups the population into similar sub-groups
- Because each sub-group has less variability than the entire population, stratification reduces the number of sites that must be sampled
  - One can achieve the same, or higher, degree of statistical accuracy with fewer recycling centers
- The stratified, statewide weighted-average calculation is methodologically driven based upon precise sampling definitions and calculations. One cannot after the fact utilize strata cost results for policy calculations because at this level the coefficients are not statistically accurate or significant. Utilizing strata-specific handling fees would require a sampling plan that obtained an adequate number of recyclers within each strata to achieve the required statistical validity

5. Detailed Review of Handling Fee Cost Survey Methodology

- We will go over seven major aspects of the HF cost survey
  1. Designing and selecting the sample
  2. Training surveyors
  3. Conducting site visits
  4. Entering data in the cost model
  5. Compiling site files
  6. Reviewing site files
  7. Analyzing results and calculating costs

5. Detailed Review of Handling Fee Cost Survey Methodology
(continued)



5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Designing and selecting the sample
  - Critical first step of the cost survey – accurate sample design necessary to ensure validity of survey results
  - Utilize standard statistical sampling methodology and equations
  - Sample size formula:

$$n = \frac{(\sum N_i S_i)^2}{D + \sum N_i S_i^2}; \text{where} \quad D = \frac{B^2}{z^2_{\alpha/2}} \qquad \text{(equation 1)}$$

Where:

B	=	Bound on the error of estimation (DOR policy sets this margin of error at 10%).
i	=	Strata (for a simple random sample, $i = 1$)
N_i	=	Number of recycling centers in the population frame stratum i
n	=	Number of recycling centers selected
S_i	=	Standard deviation of measurements of the sites selected for stratum i
S_i^2	=	Variance of measurements of the sites selected for stratum i
z	=	Value of the standard normal variable with mean 0 and standard deviation 1. Also referred to as the "critical value" (regulations require this critical value be based on at least an 85% confidence level).

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- In the sample size equation, there are two key dynamics to consider – the size of the recycler population, and the variability in cost per container
  - To achieve a given confidence level and error rate, we must be sure we have an adequate representation of the population, and a sample that includes enough containers to account for the variability – if we have more variability, it will take a larger number of container and cost data points to achieve an average that we are confident about
    - As population size increases (N) (i.e. more recyclers), the number of recyclers that must be sampled increases (n) – it takes a larger sample to make sure we are representing all the recyclers/containers in the population
    - As variability increases (S^2)(using previous year results as a surrogate), the number of recyclers that must be sampled increases (n) – recycler costs are less consistent, so it takes more recyclers to make sure we are representing all the recyclers/containers in the population

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Designing and selecting the sample
- Once we determine sample size, the number of recyclers within each strata is calculated, based on the proportion of variability among each strata
- If there is more variability in strata 3, then more recyclers from strata 3 are selected in the sample
- The 2011 cost survey sample sizes were as follows:

Strata	HF Recyclers	PF Recyclers
1	22	24
2	22	24
3	50	51
Total	94	99

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Designing and selecting the sample
  - Strata definitions based on an equal number of containers recycled by each strata in the population – consistent for both HF and PF recyclers for the HF calculation
  - Examine population data and determine total number of containers recycled, and where the strata lines are drawn for both HF and PF recyclers
  - These lines shift, depending on the total number of containers recycled
  - Comparison of HF recycler strata definitions for last three HF cost surveys:

Stratum	2007 Handling Fee Recyclers	2009 Handling Fee Recyclers	2011 Handling Fee Recyclers
1	≥ 4.6 million containers per site (N=145)	≥ 6.3 million containers per site (N=136)	≥ 6.9 million containers per site (N=125)
2	≥2.6 million and <4.6 million containers per site (N=295)	≥3.5 million and <6.3 million containers per site (N=292)	≥3.9 million and <6.9 million containers per site (N=298)
3	<2.6 million containers per site (N=643)	<3.5 million containers per site (N=649)	<3.9 million containers per site (N=669)
Approximate Containers per Strata	1 Billion	1.3 Billion	1.5 Billion

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Designing and selecting the sample
- Comparison of PF recycler strata definitions for last three HF cost surveys:

Stratum	2007 Non-Handling Fee Recyclers	2009 Non-Handling Fee Recyclers	2011 Non-Handling Fee Recyclers
1	≥ 24 million containers per site (N=63)	≥ 31 million containers per site (N=61)	≥ 29 million containers per site (N=69)
2	≥12 million and <24 million containers per site (N=133)	≥15 million and <31 million containers per site (N=144)	≥13 million and <29 million containers per site (N=162)
3	<12 million containers per site (N=483)	<15 million containers per site (N=524)	<13 million containers per site (N=611)
Approximate Containers per Strata	2 Billion	3 Billion	3 Billion

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Designing and selecting the sample
- For a given confidence level and error rate, the sample size (i.e. number of recyclers surveyed) depends on population size, number of containers recycled, and variability of costs among recyclers (using prior survey results)

	Number of Recycling Centers Statewide		
Type	**2007 Survey**	**2009 Survey**	**2011 Survey**
Non-Handling Fee Recyclers	679	729	842
Handling Fee Recyclers	1,083	1,077	1,092

	Sampling Approach and Number of Recycling Potential Centers Surveyed		
Type	**2007 Survey**	**2009 Survey**	**2011 Survey**
Non-Handling Fee Recyclers	*Stratified random*	*Stratified random*	*Stratified random*
	63	85	99
Handling Fee Recyclers	*Stratified random*	*Stratified random*	*Stratified random*
	115	100	94

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Designing and selecting the sample
- To select the recyclers to be sampled, we sort all recyclers by recycler type and strata and use the random number function in Excel
  - Any site within a strata has an equal chance of being selected
- Each RC is assigned a random number, the RCs are sorted low to high, and we select the appropriate number of sites from each strata
- We freeze the random number order so that if a site has to be dropped, then the next random number site in the list is selected
  - For example, if one of the 22 stratum 1 HF sites is dropped, then site #23 is added to the survey
  - This maintains the validity of the random sample

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Training surveyors
  - Survey teams typically consist of two individuals – auditors and/or recycling experts
  - New surveyors receive 60 hours of classroom training and a 4 hour "field trip" to a recycling site
  - The training manual is over 700 pages long and is chapter organized by training topic
  - Returning surveyors participate in a 24 hour refresher class
  - Training covers a wide range of topics, including
    - Program information
    - Fundamentals of a cost survey
    - Workpaper techniques
    - Confidentiality and security techniques (all surveyors sign confidentiality statements)
    - Interviewing methods
    - Understanding costs
    - Conducting labor interviews
    - Use of the cost model
    - File review and quality control
  - Project managers are always available to answer surveyor questions and discuss how to handle unique situations

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Conducting site visits
  - Three main components: site tour, review financial data, labor allocation interviews
  - Surveyors strictly follow agreed-upon procedures reviewed in training
  - Site tour
    - Provides surveyors with an understanding of site operations, scale, equipment, procedures, materials handling practices
    - Is a check to corroborate financial and labor information that surveyors will obtain
    - Surveyors prepare a Site Memo to summarize site tour information

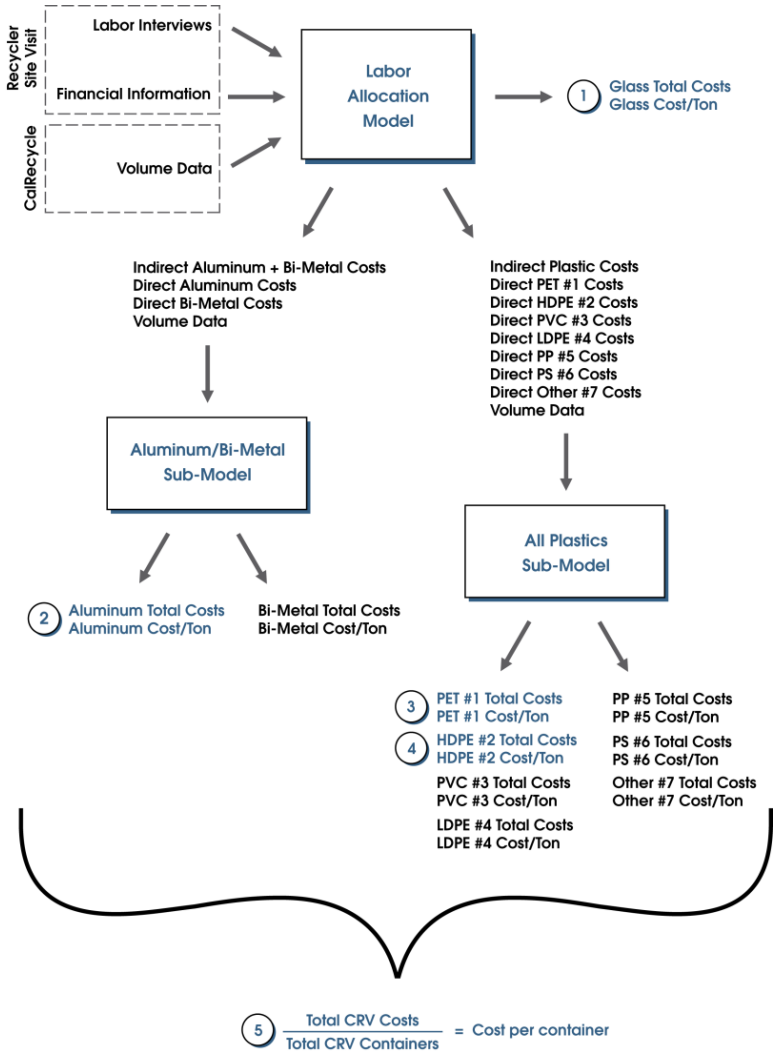
5. Detailed Review of Handling Fee Cost Survey Methodology *(continued)*

- Conducting site visits *(continued)*
  - Review financial data for calendar year
    - Prefer audited or reviewed financial statements, more often review tax returns, “Quick Books”, or compiled financial statements
    - Review costs only – not revenue
    - Review financial statement item-by-item with site representative
    - Categorize costs to direct, indirect
      - Direct costs can be assigned to particular material (ex. baling wire), non-CRV, other business, etc.
      - Indirect costs are not readily assigned - rent, telephone, insurance, property tax, etc.
    - Categorize costs into allowable and non-allowable costs (specified in regulation)
    - Recyclers sign an affidavit attesting to the provided cost survey information

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- This is a conceptual diagram of how the cost models and sub-models work



5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Allowable costs
  - Direct Labor
    - Contract (or outside) labor
    - Direct labor
    - Officer's salary
    - Overtime, holiday, vacation pay
    - Owner's net income
    - Safety incentive program
    - Temporary service (contract, office, site)
    - Vacation/holidays (paid)
    - Wages (administration, field supervisors, site, truck drivers)
  - Other Labor/Overhead
    - Accrued vacation and holidays
    - Employee benefits (pension (401k), profit sharing, union)
    - Employee welfare
    - Group insurance
    - Insurance (dental, health, legal, vision, life)
    - Payroll taxes (FICA, Medicare, FUTA)
    - Retirement
    - Unemployment tax
    - Union benefits
    - Workers compensation insurance

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Allowable costs
  - General Business Overhead
    - Accounting, bookkeeping, and audit fees
    - Advertising/promotion
    - Automobile (fuel, payments)
    - Auto fuel, automobile
    - Bad debt accrual
    - Bank charges and fees
    - Business meals
    - Cash over/short
    - City franchise tax
    - Computer expense
    - Consulting fees
    - Credit card fees
    - Dues/subscriptions
    - Laundry
    - Legal and professional services
    - Licenses/permits
    - Meals/entertainment/meetings
    - Miscellaneous
    - Office expense
    - Outside services (other than contract labor)
    - Payroll processing fees

5. Detailed Review of Handling Fee Cost Survey Methodology *(continued)*

- Allowable costs
  - General Business Overhead *(continued)*
    - Pension administrative fees
    - Physical exam
    - Postage/courier
    - Printing
    - Professional fees
    - Reproduction (faxes, printing, Xerox)
    - Safety awards
    - Security (alarms, dogs)
    - Service (exterminator, janitorial, lab analysis, laundry)
    - Site mileage – auto
    - Taxes/licenses/permits (business)
    - Telephone/fax
    - Training/recruiting expenses
    - Travel/relocation expenses
    - Voucher redemption fees

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Allowable costs
  - Transportation
    - Auto/Truck expense
    - Auto/Truck fuel
    - Freight In-recycler
    - Freight Out (excluding scrap value deduction)
    - Fuel
    - Gas, diesel, oil, and tires
    - Hauling
    - Insurance (auto, truck)
    - Lease
    - Mileage
    - Permits/registration/license/taxes (auto, truck)
    - Road expense (truck driver)
    - Service (outside maintenance)
    - Tolls
    - Truck (maintenance/repair, outside service, registration)
    - Weight fees
  - Rent
    - Building
    - Equipment
    - Facilities
    - Property/site
    - Vehicles (trucks, autos, forklifts)
  - Depreciation
    - Amortization
    - Depreciation expense
    - Schedule 179 deduction

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Allowable costs
  - Property Taxes
    - Property tax
    - Unsecured property tax
  - Utilities
    - Gas
    - Electricity
    - Refuse collection (trash, garbage, waste, disposal)
    - Sewer
    - Water
  - Supplies
    - Baling and packing supplies
    - Parts
    - Printing and stationary
    - Office
    - Safety equipment and items
    - Shop supplies
    - Small equipment
    - Small tools
    - Uniforms
    - Yard supplies

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Allowable costs
  - Fuel
    - Fluids, gas, oil, and lubricants
    - Gasses
    - Propane
    - Yard fuel
  - Insurance
    - Business
    - Fire
    - Group
    - Liability
    - Property
  - Interest
    - Interest (loan, mortgage, notes payable)
  - Maintenance
    - Building, facility, and property
    - Equipment
    - Painting
    - Radio maintenance
    - Repairs
    - Repairs and maintenance
    - Scale expense – repairs

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Non-allowable costs
  1. Brokering activities/commissions
  2. Charitable contributions/donations
  3. Corporate overhead allocation
  4. Exclusivity payments – (supermarket contract)
  5. Litigation
  6. Lobbying
  7. Penalties (imposed by government/business)
  8. Promotion items increasing scrap value, and other incentives
  9. Royalty expense
  10. Scrap value deduction
  11. Scrap value paid to the consumer
  12. Settlements
  13. Shipping/handling (incurred by processors for shipping/ hauling beverage containers to the end user – these are deducted from site's total allowable costs)
  14. Shrink (also called shrinkage, moisture short, inventory change – refers to difference in CRV payments recycler makes to customer, and processor makes to recycler)
  15. Taxes (income and sales)

5. Detailed Review of Handling Fee Cost Survey Methodology

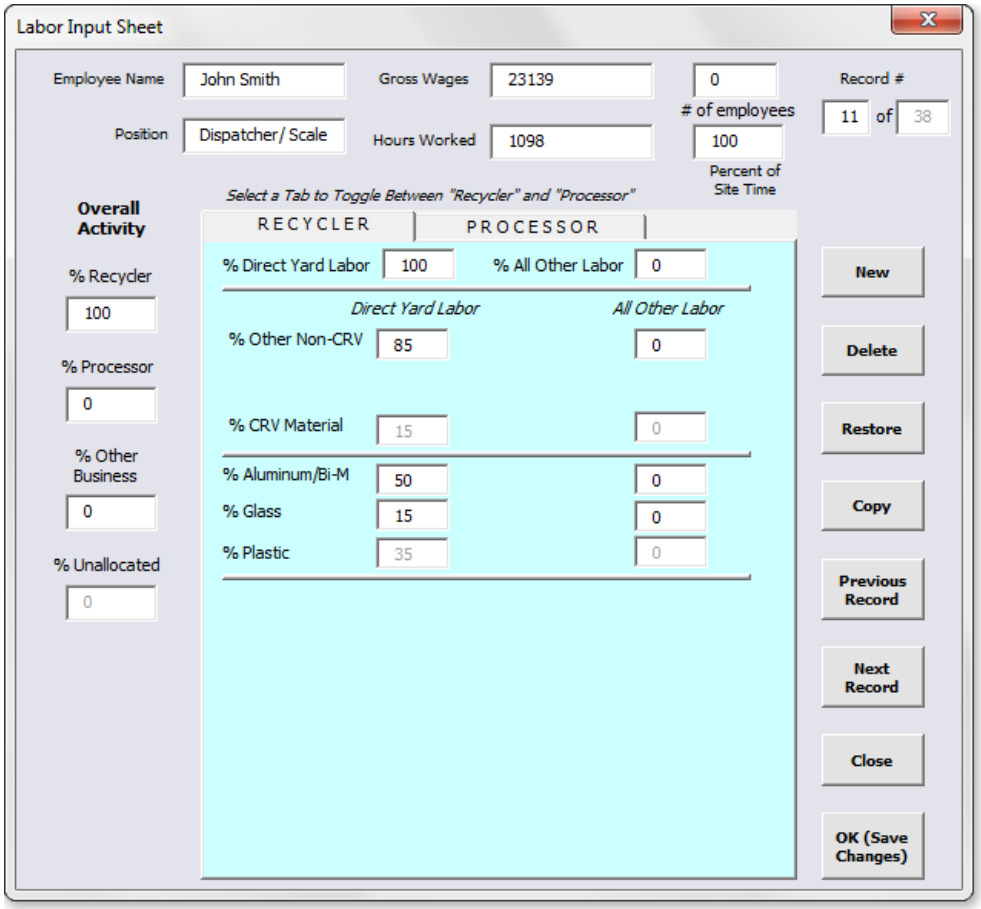
(continued)

- Conducting site visits – labor allocation interview of site representative
  - Obtain wage and hour information for each employee for cost survey year
    - W-2 form, DE-6, DE-3, payroll register, time sheets
  - For each employee, obtain percent of time spent on:
    - Recycling versus other business (including processor)
    - Direct yard labor and All other labor (office/administrative)
    - CRV material versus non-CRV material
    - Aluminum/bi-metal
    - Glass
    - Plastic
  - Surveyors enter labor allocation information into the cost model for each employee or group of identical employees
  - Surveyors are careful to account for 100 percent of each labor persons time and efforts
  - Surveyors perform operations and business checks for reasonableness of labor allocation information

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Labor input form used to enter wages and labor allocation into the cost model



5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- The labor allocation information is used to allocate labor expenses for each employee, and more importantly, to allocate indirect costs between:
  - Recycling versus other business
  - CRV material versus non-CRV material
  - CRV material types
    - Aluminum/bi-metal
    - Glass
    - Plastics (#1 to #7)
  - Site representatives provide their best estimates of percent of time spent in the various categories based on employee responsibilities and activities, weight of materials recycled, and count of materials recycled
  - The Excel labor allocation cost model to allocate indirect costs, that we prepare for each recycling site in the survey, uses a complex series of equations to compile overall site allocation percentages

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Entering data into the cost model
  - The Excel labor allocation cost model is a 14-page workbook prepared for each recycler in the cost survey
  - The model utilizes site-specific volume information for the appropriate year
  - The model takes into account commingled rates at the site and relative hours per each employee
  - The survey team enters financial and labor information obtained during the site visit into the model
  - The cost model utilizes a complex series of equations to compile overall site allocation percentages between the following categories:
    - Other business percentages
    - Beverage container indirect (BCI) percentages for aluminum/bi-metal, glass, and plastic
    - All materials indirect (AMI) percentages for aluminum/bi-metal, glass, plastic, and non-CRV

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- These percentages are used to allocate indirect costs between the appropriate categories (BCI or AMI)

	RC				
	Aluminum/ Bi-Metal	Glass	Plastic	Non CRV	Total
BCI Percentage	50.54512%	14.08034%	35.37454%		100.00%
AMI Percentage	11.54605%	3.21638%	8.08063%	77.15694%	100.00%

	Percentage of Total Hours
RC	100.000%
No PR	0.000%
Other Business	0.000%

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- The model sums costs, by category, and determines total cost per material, total CRV costs, tons recycled, containers recycled, cost per ton and cost per container metrics for each site

	Description	Total	Aluminum/ Bi-Metal	Glass	Plastic	Non CRV Materials
1	Labor					
	a. Per Labor Input Sheet	$1,333,946.00	$138,229.62	$39,000.56	$96,569.20	$1,060,146.61
	b. All Other Labor	281,916.00	32,550.16	9,067.49	22,780.59	217,517.76
2	General Business Overhead	535,696.01	55,585.46	15,484.43	38,902.09	425,724.03
2a	Supermarket Site Contract	0.00	0.00	0.00	0.00	0.00
3	Transportation	247,489.00	28,575.20	7,960.19	19,998.67	190,954.94
4	Rent	95,599.99	11,038.02	3,074.86	7,725.08	73,762.03
5	Depreciation	80,202.00	0.00	0.00	0.00	80,202.00
6	Property Taxes	13,484.00	1,556.87	433.70	1,089.59	10,403.84
7	Utilities	22,970.00	2,652.13	738.80	1,856.12	17,722.95
8	Supplies	145,263.01	16,772.14	4,672.21	11,738.17	112,080.49
9	Fuel	0.00	0.00	0.00	0.00	0.00
10	Insurance	8,213.00	948.28	264.16	663.66	6,336.90
11	Interest	0.00	0.00	0.00	0.00	0.00
12	Maintenance	55,133.00	6,365.68	1,773.29	4,455.09	42,538.94
13	Cost of Bonding	0.00	0.00	0.00	0.00	0.00
14	Disposal Costs	0.00	0.00	0.00	0.00	0.00
	Subtotal	$2,819,912.01	$294,273.56	$82,469.69	$205,778.26	$2,237,390.49
15	State Administrative Fee	(12,669.39)	(6,911.02)	(1,501.07)	(4,257.30)	0.00
	Total Costs	$2,807,242.62	$287,362.54	$80,968.62	$201,520.97	$2,237,390.49
	Total Tons	1,566.1	294.4	953.1	318.7	
	Cost per Ton		$976.10	$84.96	$632.42	
	Number of Containers	29,917,751	17,340,101	3,669,292	8,908,357	
	Total CRV Costs	$ 569,852.13				
	Cost per Container	**$ 0.0190**				

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- The cost model includes two indirect cost allocation sub-models for aluminum/bi-metal and all plastics to allocate costs between aluminum and bi-metal, and all seven plastic resins
- These models were first developed for the 2003 cost survey to determine costs per ton for aluminum, bi-metal, and plastic resins #1 to #7
- The labor allocation approach does not provide a fine enough scale to allocate costs for low volume materials – for example, a recycler cannot determine how much time an employee spent on #6 plastic
- The sub-models utilize four operational and material handling factors to allocate costs:
  - Weight of containers
    - As the weight of a material increases, the cost of recycling increases
  - Number of containers
    - As the number of containers increases, the cost of recycling increases
  - Commingled rate
    - As the commingled rate decreases (i.e. more non-CRV containers), the cost of recycling increases
  - Volume (size) of containers
    - As the size (or volume) of a container increases, the cost of recycling increases

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Compiling site files
  - Following completion of the site visit, surveyors enter all financial and labor data, prepare work papers and documents summarizing site visit activities, conduct quality control reviews, and upload the completed cost model onto a secure server
- Reviewing site files
  - Each recycler site file is subject to a five-step review process, 13 hours in total:
    - Survey team review
    - Independent manager review
    - CPA audit partner review
    - Project co-director/business analyst review
    - Project Director review
  - Site files that do not meet quality control criteria are returned to the survey team for corrections, if appropriate
  - Only after this extensive series of quality control reviews is the data utilized for the final cost per ton or cost per container calculations

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Analyzing results and calculating costs
  - Data are extracted from each completed cost model, including:
    - RC identifiers (name, RC number, recycler type)
    - Strata (glass tons strata 1,2 or 3, or container strata 1,2 or 3)
    - Tons of each CRV material
    - Cost of recycling each CRV material
    - Number of CRV containers recycled
    - Total CRV recycling costs
  - Data are compiled in a summary spreadsheet, summing total CRV costs and containers by strata for HF and for PF recyclers (separate summary spreadsheets for PF and HF recyclers)
  - Average costs per container by strata are multiplied by population containers per strata to obtain population costs per strata
  - Population costs per strata are summed and divided by population containers to obtain a statewide weighted-average cost per container

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Statewide weighted-average calculation

$$\left(\frac{\text{Container Stratum 1 Sample Costs}}{\text{Container Stratum 1 Sample Containers}} \times \text{Container Stratum 1 Population Containers} = \text{Container Stratum 1 Total Population Costs}\right) +$$

$$\left(\frac{\text{Container Stratum 2 Sample Costs}}{\text{Container Stratum 2 Sample Containers}} \times \text{Container Stratum 2 Population Containers} = \text{Container Stratum 2 Total Population Costs}\right) +$$

$$\left(\frac{\text{Container Stratum 3 Sample Costs}}{\text{Container Stratum 3 Sample Containers}} \times \text{Container Stratum 3 Population Containers} = \text{Container Stratum 3 Total Population Costs}\right)$$

$$\frac{\text{Total Population Costs}}{\text{Total Population Containers}} = \text{Statewide Stratified Weighted-Average Cost Per Container}$$

5. Detailed Review of Handling Fee Cost Survey Methodology

(continued)

- Analyzing results and calculating costs

Handling Fee Recycler Cost per Container Calculation					
Stratum	Sample CRV Costs	Sample CRV Containers	Sample Cost per Container[a]	Total Population Containers	Population CRV Costs[b]
1	$4,035,064.01	265,036,398	$0.01522	1,518,736,173	**$23,122,098.39**
2	1,992,829.98	108,756,791	0.01832	1,513,367,002	**27,730,527.03**
3	3,245,139.13	118,996,392	0.02727	1,530,305,416	**41,732,811.41**
Total	$9,273,033.12	492,789,581		4,562,408,591	**$92,585,436.83**
				Handling Fee Recycler Cost per Container	$0.02029

Processing Fee Recycler Cost per Container Calculation					
Stratum	Sample CRV Costs	Sample CRV Containers	Sample Cost per Container[a]	Total Population Containers	Population CRV Costs[b]
1	$ 10,329,381.98	1,032,425,570	$0.01000	3,044,270,529	**$30,457,820.94**
2	$ 5,760,825.11	460,225,768	0.01252	3,048,789,601	**38,162,886.37**
3	$ 3,914,298.92	259,606,029	0.01508	3,144,984,680	**47,419,584.91**
Total	$20,004,506.01	1,752,257,367		9,238,044,810	**$116,040,292.22**
				Processing Fee Recycler Cost per Container	$0.01256

a/ Cost per container rounded to 5 digits for this calculation.

b/ Population CRV costs are rounded to 2 digits (i.e. cents) based on (Sample CRV Costs ÷ Sample CRV Containers) x (Total Population Containers).

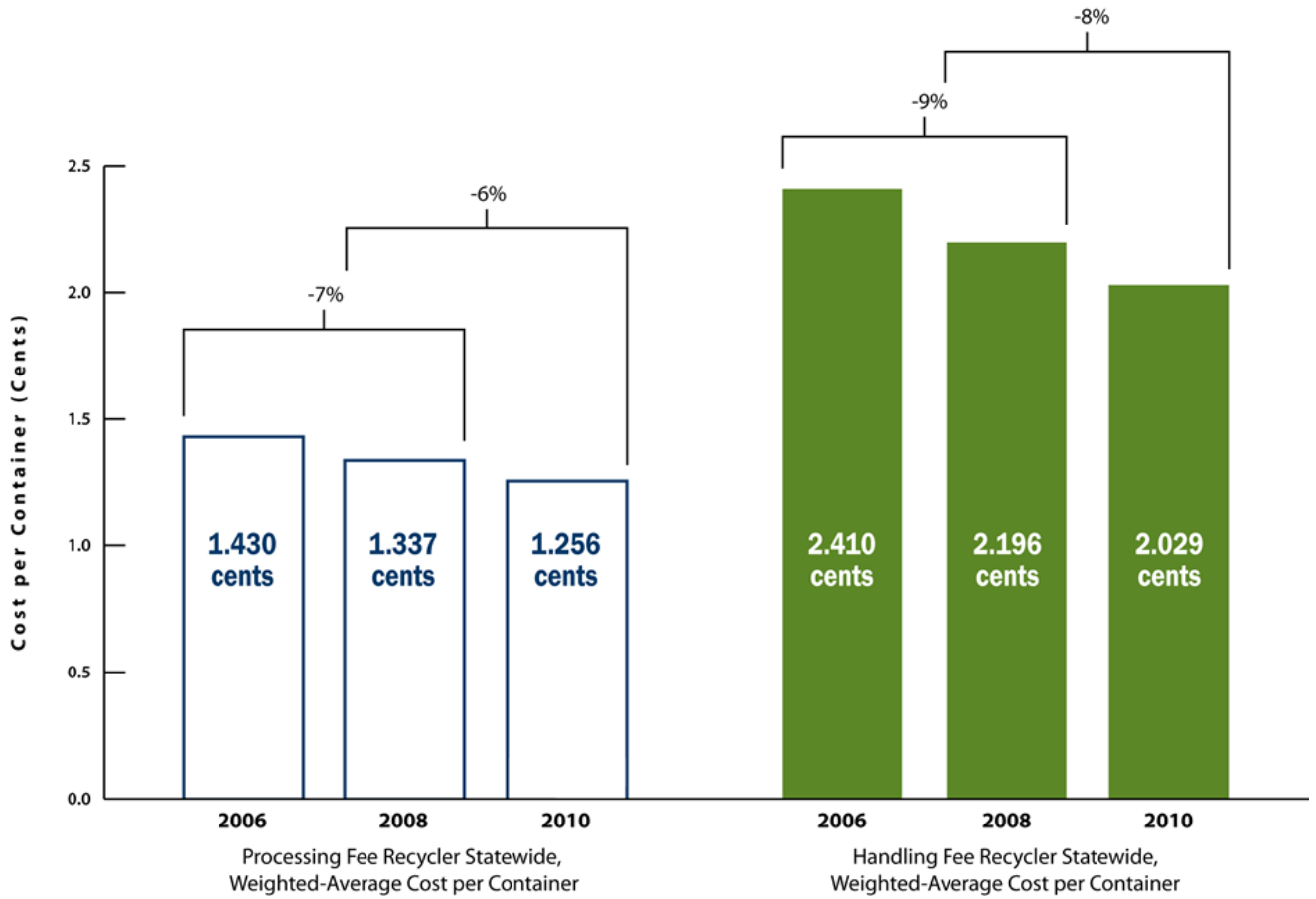
Handling Fee Payment Calculation				
HF Recycler Cost per Container - PF Recycler Cost per Container				
$0.02029	-	$0.01256	=	$0.00773

6. Analysis of Handling Fee Cost Survey Results

Recycler Type	2006	2008	2010	Percent Change 2006 to 2008	Percent Change 2008 to 2010
Number of CRV Containers Recycled by Populations					
Processing Fee Recyclers	6,876,247,742	8,966,835,412	9,238,044,810	30%	3%
Handling Fee Recyclers	3,108,522,318	3,992,318,572	4,562,408,591	28%	14%
Processing Fee Recyclers					
PF Cost per Container	$0.01430	$0.01337	$0.01256	-7%	-6%
Handling Fee Recyclers					
HF Cost per Container	$0.02410	$0.02196	$0.02029	-9%	-8%
Handling Fee Payment	$0.00980	$0.00859	$0.00773	-12%	-10%

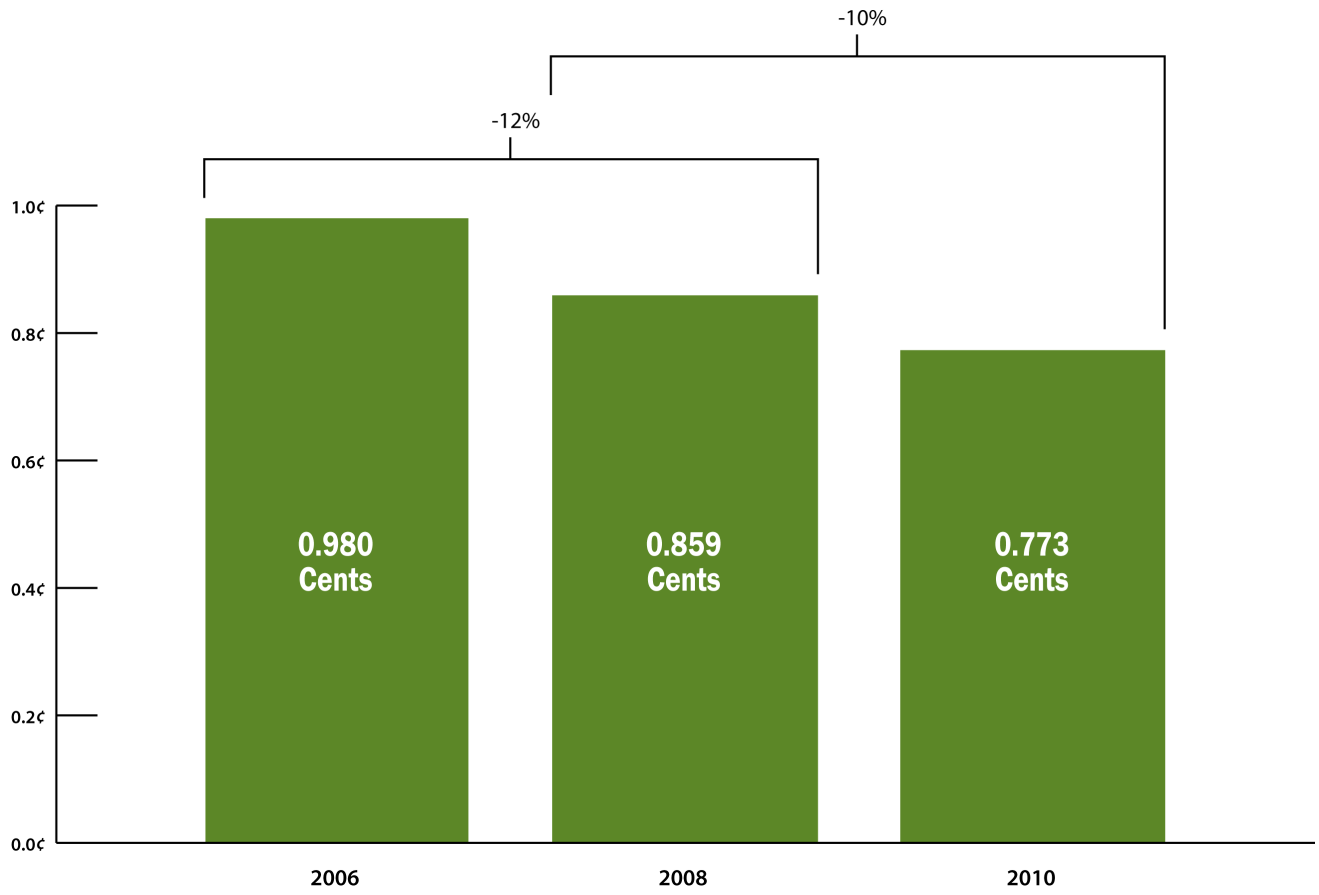
6. Analysis of Handling Fee Cost Survey Results *(continued)*

- HF recycler costs per container have decreased slightly more than PF recycler costs per container



6. Analysis of Handling Fee Cost Survey Results *(continued)*

- The result is a decrease in the calculated handling fees



6. Analysis of Handling Fee Cost Survey Results *(continued)*

Comparison of Cost per Container, Error Rates, Sample Size, and Handling Fee Payment					
	2006	2008	2010	Percent Change 2006 to 2008	Percent Change 2008 to 2010
Processing Fee Recyclers					
Cost per Container	$0.01430	$0.01337	**$0.01256**	-7%	-6%
Error Rate	6.16%	7.10%	**5.79%**	15%	-18%
Sample Size	63	85	**99**	35%	16%
Handling Fee Recyclers					
Cost per Container	$0.02410	$0.02196	**$0.02029**	-9%	-8%
Error Rate	6.31%	5.17%	**5.62%**	-18%	9%
Sample Size	115	100	**94**	-13%	-6%
Handling Fee Payment	$0.00980	$0.00859	**$0.00773**	-12%	-10%

6. Analysis of Handling Fee Cost Survey Results *(continued)*

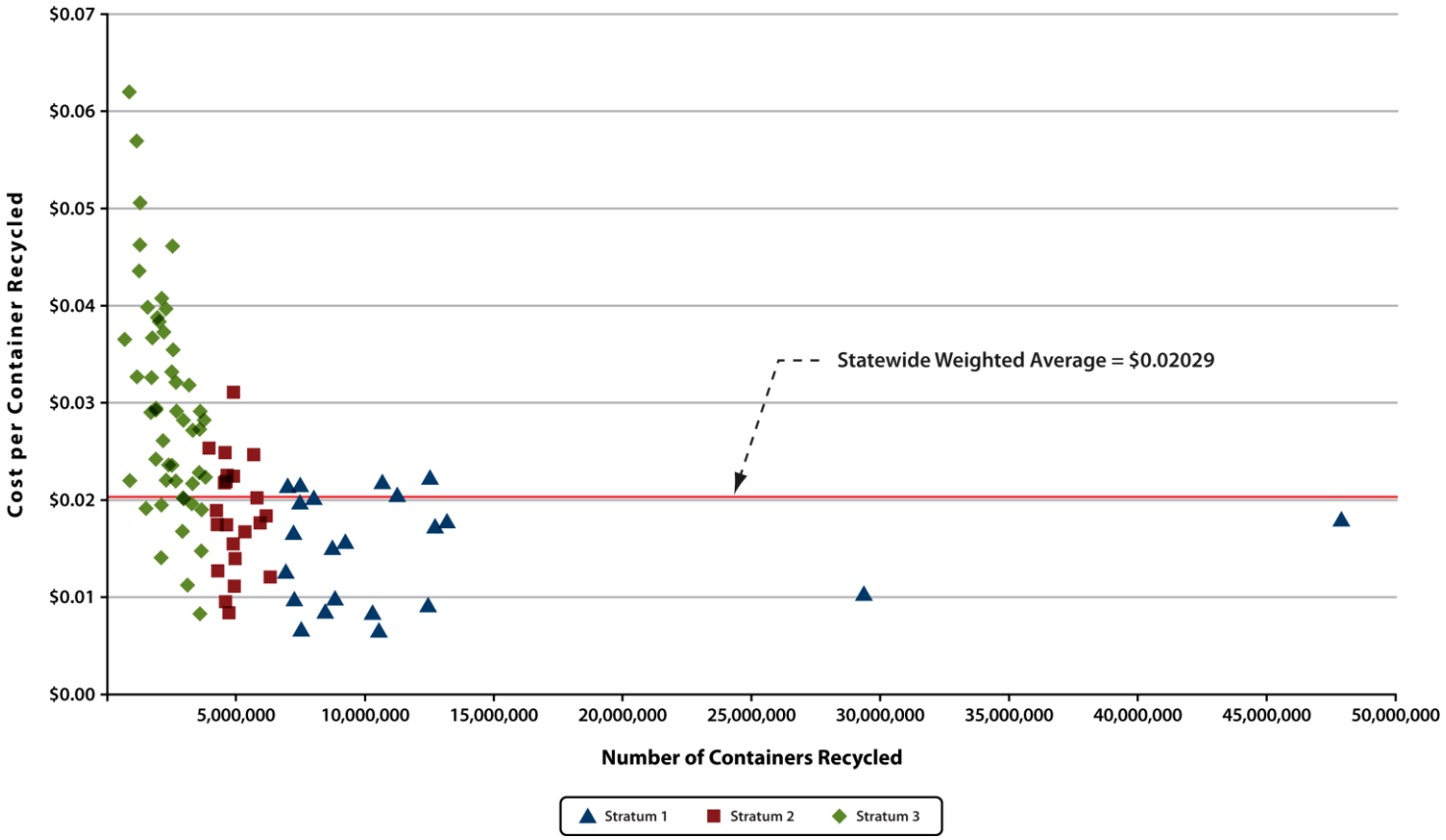
Cost per Container by Strata[a]					
	2006	2008	2010	Percent Change 2006 to 2008	Percent Change 2008 to 2010
Processing Fee Recyclers					
Strata 1	$0.01353	$0.01100	**$0.01000**	-19%	-9%
Strata 2	0.01224	0.01211	**0.01252**	-1%	3%
Strata 3	0.01709	0.01710	**0.01508**	0%	-12%
Handling Fee Recyclers					
Strata 1	$0.01527	$0.01557	**$0.01522**	2%	-2%
Strata 2	0.02197	0.01931	**0.01832**	-12%	-5%
Strata 3	0.03542	0.03106	**0.02727**	-12%	-12%

a/ The three (3) container strata are proportionally equivalent between 2006, 2008, and 2010, though the number of containers per recycler "cut-off points" are different between 2006, 2008, and 2010.

Note: These cost per container estimates at the strata level are not statistically significant.

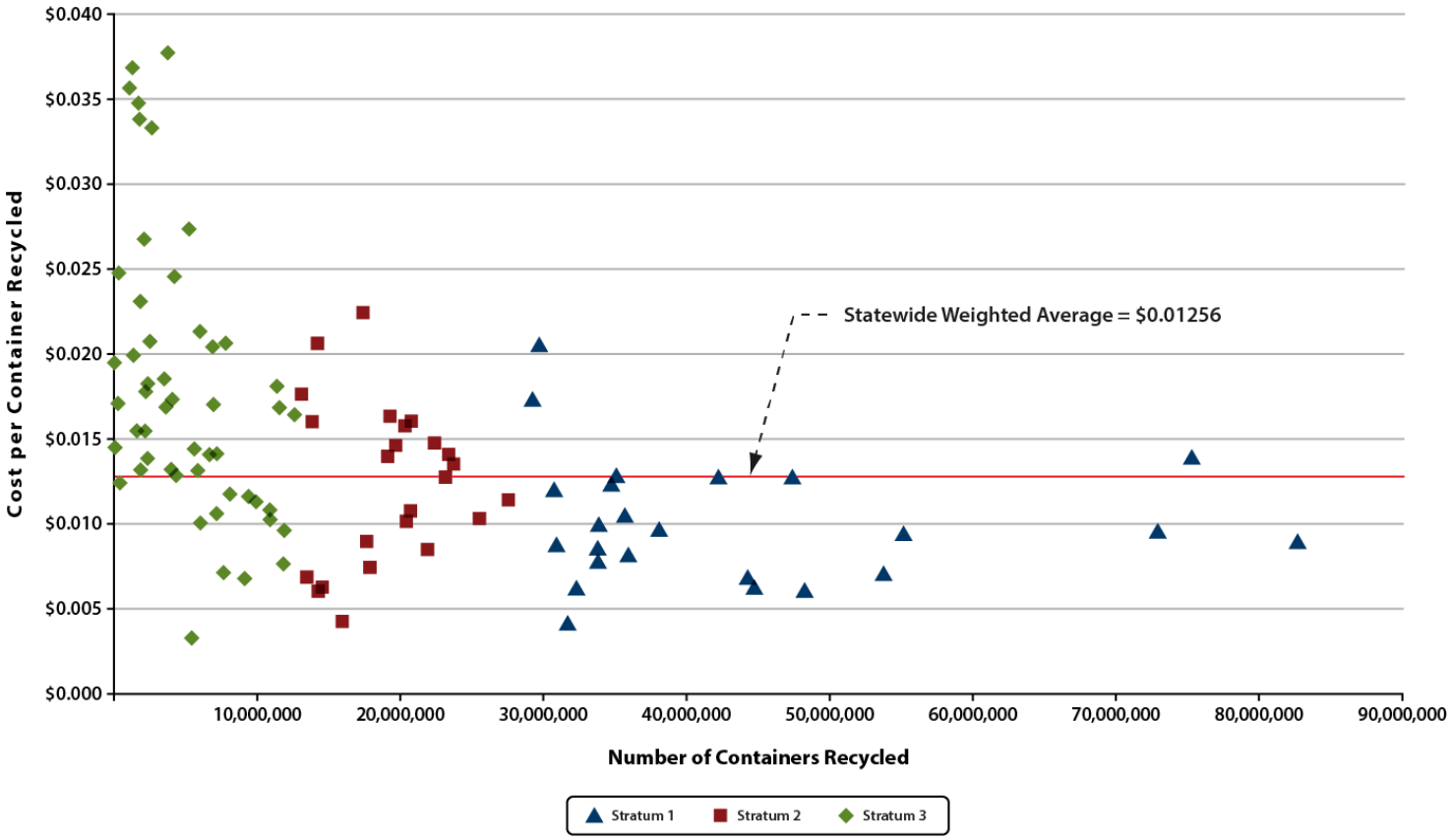
6. Analysis of Handling Fee Cost Survey Results *(continued)*

- Graph of HF recycler costs per container recycled versus number of containers recycled shows distribution of recyclers above and below the statewide weighted-average and generally decreasing costs with increasing volumes



6. Analysis of Handling Fee Cost Survey Results *(continued)*

- Graph of PF recycler costs per container recycled versus number of containers recycled shows similar distribution of recyclers above and below the statewide weighted-average and generally decreasing costs with increasing volumes



7. Policy Implications of Current Handling Fee Methodology

- AB 1933 states that CalRecycle "may update the methodology and scrap values used for calculating the handling fee from the most recent cost survey if it finds that the handling fee resulting from the most recent cost survey does not accurately represent the actual cost incurred for the redemption of empty beverage containers by those certified recycling centers"
  - However, scrap value is NOT used in the handling fee methodology, rather scrap value is part of the processing payment calculation:

Processing Payment = (Cost of Recycling + Reasonable Financial Return) – SCRAP VALUE

  - Due to data collection requirements, cost of recycling and scrap values reflect different time periods, and are "behind" the year in which they are applied:
    - Cost of recycling covers the calendar year 2 years prior to the processing payment
      - 2010 costs of recycling for January 1, 2012 processing payment and fees
    - Scrap values cover a one-year period closer to, but still not, the correct time period
      - October 2010 to September 2011 scrap values for the January 1, 2012 processing payments and fees

7. Policy Implications of Current Handling Fee Methodology

(continued)

- We have recommended addressing the timing differences between processing fee cost survey components utilizing an index (such as COLA)
- The handling fee costs also are behind the year in which they are applied, but because they reflect a difference between HF and PF recyclers, the time lag is less important
  - Both HF and PF costs per container are from 2010 for the July 1, 2012 handling fee
  - Legislation could move the implementation sooner – i.e. January 1, 2012
- The handling fee methodology, as described here and implemented over the last three handling fee cost surveys, is methodologically sound, reasoned, accurate, and meets the policy intent and goals of AB 3056
- The current handling fee calculation requires considerable time and resources to accurately determine the difference between HF recycler and PF recycler cost per container to recycle

7. Policy Implications of Current Handling Fee Methodology

(continued)

- The current handling fee approach utilizes the actual cost differential between convenient CZ recyclers and traditional recyclers – it reflects the actual additional "cost of convenience"
- As with any average, some recyclers' costs are higher than the average, and some recyclers' costs are lower than the average
- Use of a statewide weighted-average, as specified in statute, results in a more accurate measure of recycler costs than a simple average, and is a better statistical method given the large and uneven population
- The current handling fee approach is performance based
  - Lack of an overall cap creates an overall incentive for HF recyclers to increase recycling
  - Lack of a per site/per month cap creates an incentive for individual HF recyclers to increase recycling
- The current handling fee approach has resulted in higher annual HF payments and higher average per site HF payments than the pre-AB 3056 approach

7. Policy Implications of Current Handling Fee Methodology

(continued)

- Comparing HF payments using 2011 HF recycler data under three different scenarios illustrates impacts of HF approaches
  - 1,057 HF recyclers in 2011
  - 4,763,504,816 containers recycled
    - 4.4 percent increase over 2010
- Comparison of three options:
  - Actual 2010 HF of 0.859 cents/container (without COLA)
  - Calculated July 1, 2012 HF of 0.773 cents/container
  - Pre-AB 3056 approach of 1.8 cents/container, up to $2,300 per site monthly cap

7. Policy Implications of Current Handling Fee Methodology

(continued)

Metric	Actual 2010 HF	Calculated July 2012 HF	Pre-AB 3056 HF (2007/2008)
Handling Fee	0.859 cents	0.773 cents	1.8 cents
Cap	None	None	$2,300/mo
Average HF	0.859 cents	0.773 cents	**0.558 cents**
Total HF	$40.9 million	$36.8 million	**$26.6 million**
Average/site/month	$ 3,226	$ 2,903	$ 2,094
Average/site/year	$ 38,712	$ 34,836	$ 25,128

8. Longer-Term Challenges Related to Convenient Recycling and Convenience Zones

- If there is dissatisfaction with the resulting handling fees, then stakeholders should address these changes at the legislative/policy level
  - Our opinion is that applying a COLA to the July 1, 2012 handling fee of $0.00773 is inappropriate
  - The handling fee is to reflect the difference between HF and PF recyclers – if one applied a COLA to the HF recycler cost, one should apply a COLA to the PF recyclers cost, and the two COLAs would negate each other:
    - (HF cost x COLA) – (PF cost x COLA) = $0.00773
- The root cause of dissatisfaction with handling fees relates to broader issues of convenience and convenience zones
- One cannot “solve” long-term handling fee issues without a comprehensive analysis and assessment of convenience and convenience zones
- The CZ Effectiveness Study was completed in 1991 – over twenty years ago
- Since then, technology, economics, industry practices, operational practices, market dynamics, and consumer behavior have changed

8. Longer-Term Challenges Related to Convenient Recycling and Convenience Zones *(continued)*

- We need to answer broader policy questions related to convenience first, and then address the specifics of handling fees
- Any CZ/HF "solution" must be comprehensive – there are many moving parts and interrelated variables
- The Beverage Container Recycling and Litter Reduction Program – Program Reform effort has been addressing many individual policy issues in the short-term as part of the effort to eliminate the structural deficit
- In the longer-term, this reform would benefit from a new comprehensive evaluation of convenience
- How much convenience is the "right" amount?
- How much should we pay for providing convenient recycling/redemption opportunities?

8. Longer-Term Challenges Related to Convenient Recycling and Convenience Zones *(continued)*

- Issues to consider going forward include:
  - Definition of convenience zones – markets are not the same as they were in 1987
    - Current supermarket only versus including big box stores or other businesses
    - Current annual sales threshold – $2 million versus higher sales thresholds
    - Based on population or other factor(s), rather than supermarkets
  - Number and size of convenience zones
    - Current ½ mile radius versus larger (1 mile) radius
    - Change exemptions
    - Adjust number of RCs receiving HF per zone restrictions
    - Change requirements related to recycler location in a zone
  - Cap for maximum HF payments (total annual or monthly per recycler)
    - Pro: Reduces “windfall” HF payments to large recyclers
    - Con: Reduces performance-based incentive to increase recycling

8. Longer-Term Challenges Related to Convenient Recycling and Convenience Zones *(continued)*

- Issues to consider going forward include:
  - Tiered HF payments (higher HF for smaller recyclers)
    - Pro: Reduces “windfall” HF payments to large recyclers
    - Con: Reduces performance-based incentive to increase recycling
    - Con: Would require larger HF survey to maintain statistical accuracy
- These broader policy issues should be considered as part of a comprehensive CZ assessment and resulting recommendations related to convenient beverage container recycling opportunities